WHAT IS CLAIMED IS:

1. A deformable mirror element for modulating an incident beam of light, the element comprising:

a substrate;

an elongate support extending along the substrate and projecting outwardly therefrom; and

a ribbon member, attached to the elongate support along a longitudinal portion of the ribbon member and extending transversely from the elongate support to form at least one reflective wing portion, the ribbon member having a length measured along the elongate support which is greater than a width of the wing portion in a direction transverse to the elongate support, the wing portion being elastically deformable towards the substrate on application of an actuation force.

2. A deformable mirror element according to claim 1, wherein a natural frequency of vibration of the reflective wing portion is at least 500 KHz.

3. A deformable mirror element according to claim 1, wherein a natural frequency of vibration of the reflective wing portion is at least 1 MHz.

4. A deformable mirror element according to claim 1 comprising a first electrode on the substrate and a second electrode on the ribbon member, whereby the ribbon member is drawn toward the substrate by the application of a voltage between the first and second electrodes.

5. A deformable mirror element according to claim 4, wherein the substrate comprises first and second opposite surfaces, the elongate support projecting outwardly from the first surface and the first electrode deposited on the second surface.

6. A deformable mirror element according to claim 4, wherein the second electrode comprises a reflective layer on the ribbon.

7. A deformable mirror element according to claim 4, wherein the wing portion is adapted to snap-down into contact with the substrate under application of a voltage between the first and second electrodes that is higher than a snap-down voltage level.

8. A deformable mirror element according to claim 7, wherein the wing portion is adapted to snap-down into contact with the substrate under application of a voltage sufficient to cause a deformation of the wing to move a free edge of the wing through a distance that is greater than one-third of the spacing between the electrodes.

9. A deformable mirror element according to claim 4 wherein the first electrode comprises a doped area of the substrate.

10. A deformable mirror element according to claim 4 wherein the second electrode comprises a doped area of the ribbon member.

11. A deformable mirror element according to claim 1, wherein at least the wing portion of the ribbon member comprises a conductive electrode.

12. A deformable mirror element according to claim 9, wherein the electrode comprises a layer of electrically conductive material deposited on at least the wing portion of the ribbon member.

13. A deformable mirror element according to claim 10, wherein conductive material is reflective at the wavelength of the incident light beam.

14. A deformable mirror element according to claim 1, wherein a ratio of the length of the wing to the width of the wing exceeds 3 : 1.

15. A deformable mirror element according to claim 1, wherein a ratio of the length of the wing to the width of the wing exceeds 10 : 1.

16. A deformable mirror element according to claim 1, comprising at least a first end support supporting a first end of the ribbon member.

17. A deformable mirror element according to claim 13, comprising a second end support supporting a second end of the ribbon.

18. A deformable mirror element according to claim 1, wherein the elongate support has a height above the substrate of between 0.2 μm and 0.5 μm.

19. A deformable mirror element according to claim 1, used to modulate an incident light beam having a wavelength between 380 nm and 1054 nm.

20. A deformable mirror element according to claim 1, used to modulate an incident light beam having a wavelength between 790 nm and 980 nm.

21. A deformable mirror element according to claim 1, wherein the ribbon member comprises silicon nitride.

22. A deformable mirror element according to claim 21, wherein the ribbon has a thickness of at least 0.2 μm.

23. A deformable mirror element according to claim 1, wherein at least the wing portion of the ribbon member has high reflectivity at a wavelength of the incident light beam.

24. A deformable mirror element according to claim 23, wherein the ribbon member comprises a layer of reflective material deposited on at least the wing portion.

25. A deformable mirror element according to claim 1, wherein the ribbon member extends laterally from either side of the elongate support to form a pair of reflective wings.

26. A deformable mirror element according to claim 25 wherein a length of each of the reflective wings in a direction along the elongate support is at least 3 times a width of the wing portion in a direction transverse to the elongate support.

27. A deformable mirror element according to claim 25 wherein a length of each of the reflective wings in a direction along the elongate support is at least 10 times a width of the wing portion in a direction transverse to the elongate support.

28. A light valve, comprising an array of deformable mirror elements according to claim 1 formed on the substrate and an electrical

connection to each of the deformable mirror elements for controlling the actuation force.

29. A light valve according to claim 28, wherein the array is arranged into groups of adjacent deformable mirror elements, each group sharing a common electrical connection and each group defining an individual grating light valve modulation channel.

30. A light valve according to claim 28 comprising means controlling a bias-voltage applied to each of the deformable mirror elements.

31. Apparatus for selectively deflecting a light beam comprising a row of spaced apart deformable mirror elements according to claim 1, the mirror elements arranged with their elongate supports parallel to one another and extending substantially transversely to the row.

32. A method for modulating light, comprising:
providing a plurality of arrayed deformable mirror elements according to claim 1;
directing the light onto the wing portions to provide a plurality of reflected light beams;
elastically deforming selected ones of the wing portions by applying an actuation force thereto;
spatially filtering the reflected light from the wing portions to provide a plurality of modulated light beams.

33. A method according to claim 32, wherein the wing portions are curved away from the substrate when no actuation force is applied and the method comprises flattening out each wing portion by applying a pre-determined actuation force thereto, the degree of flattening selected

to provide the plurality of modulated beams with a substantially uniform intensity.

34. A method according to claim 33, wherein the application of an actuation force greater than the pre-determined actuation force causes the wing portion to deflect further toward the substrate into an actuated configuration.

35. A method according to claim 32, wherein the force applied in the actuated configuration is sufficiently large to deform the wing portion so that at least an edge thereof snaps down into contact with the substrate.